

Claims:

What is claimed is:

1. A substrate having organic thin film, characterized in that:  
a buffer layer and organic thin film are sequentially deposited on a substrate, and  
said buffer layer orients said organic thin film.
2. The substrate having organic thin film as set forth in claim 1, characterized in that a layer easily oriented with said buffer layer is further inserted between said substrate and said buffer layer.
3. The substrate having organic thin film as set forth in claim 1, characterized in that said substrate is an insulating substrate, said buffer layer is acene system aromatics or its derivative, said organic thin film is either  $C_n$  fullerene (where n is an integer of 60 or more),  $C_n$  fullerene derivative, or rubrene.
4. The substrate having organic thin film as set forth in claim 3, characterized in that said insulating substrate is a sapphire substrate, said acene system aromatics is either pentacene or pentacene fluoride, and said  $C_n$  fullerene is  $C_{60}$ .
5. The substrate having organic thin film as set forth in claim 4, characterized in that the surface of said sapphire substrate is flattening-treated, and said buffer layer consisting of either pentacene or pentacene fluoride is deposited by molecular layer unit.
6. A transistor provided with organic thin film formed on a substrate, characterized in that:  
said organic thin film is deposited on said substrate via the buffer layer orienting said organic thin film.
7. The transistor as set forth in claim 6, characterized in that a layer easily oriented with said buffer layer is further inserted

between said substrate and said buffer layer.

8. The transistor as set forth in claim 6, characterized in that said substrate is an insulating substrate, said buffer layer is acene system aromatics or its derivative, said organic thin film is either  $C_n$  fullerene (where  $n$  is an integer of 60 or more),  $C_n$  fullerene derivative, or rubrene.

9. The transistor as set forth in claim 8, characterized in that said insulating substrate is a sapphire substrate, said acene system aromatics is either pentacene or pentacene fluoride, and said  $C_n$  fullerene is  $C_{60}$ .

10. The transistor as set forth in claim 9, characterized in that the surface of said sapphire substrate is flattening-treated, and said buffer layer consisting of either pentacene or pentacene fluoride is deposited by molecular layer unit.

11. A method of manufacturing a substrate having organic thin film, characterized in that:

it includes a process of sequentially depositing a buffer layer and organic thin film on a substrate, and

said buffer layer orients said organic thin film.

12. The method of manufacturing a substrate having organic thin film as set forth in claim 11, characterized in that a layer easily oriented with said buffer layer is further inserted between said substrate and said buffer layer.

13. The method of manufacturing a substrate having organic thin film as set forth in claim 11, characterized in that said substrate is an insulating substrate, said buffer layer is acene system aromatics or its derivative, said organic thin film is either  $C_n$  fullerene (where  $n$  is an integer of 60 or more),  $C_n$  fullerene derivative, or rubrene.

14. The method of manufacturing a substrate having organic thin film as set forth in claim 13, characterized in that said insulating substrate is a sapphire substrate, said acene system aromatics is either pentacene or pentacene fluoride, and said  $C_n$  fullerene is  $C_{60}$ .

15. The method of manufacturing a substrate having organic thin film as set forth in claim 14, characterized in that the surface of said sapphire substrate is flattening-treated, and said buffer layer consisting of either pentacene or pentacene fluoride is deposited by molecular layer unit.

16. A method of manufacturing a transistor provided with organic thin film formed on a substrate, characterized in that:

said organic thin film is deposited on said substrate via the buffer layer orienting said organic thin film.

17. The method of manufacturing a transistor as set forth in claim 16, characterized in that a layer easily oriented with said buffer layer is further inserted between said substrate and said buffer layer.

18. The method of manufacturing a transistor as set forth in claim 16, characterized in that said substrate is an insulating substrate, said buffer layer is acene system aromatics or its derivative, said organic thin film is either  $C_n$  fullerene (where  $n$  is an integer of 60 or more),  $C_n$  fullerene derivative, or rubrene.

19. The method of manufacturing a transistor as set forth in claim 18, characterized in that said insulating substrate is a sapphire substrate, said acene system aromatics is either pentacene or pentacene fluoride, and said  $C_n$  fullerene is  $C_{60}$ .

20. The method of manufacturing a transistor as set forth in claim 19, characterized in that the surface of said sapphire substrate is flattening-treated, and said buffer layer consisting of either

pentacene or pentacene fluoride is deposited by molecular layer unit.